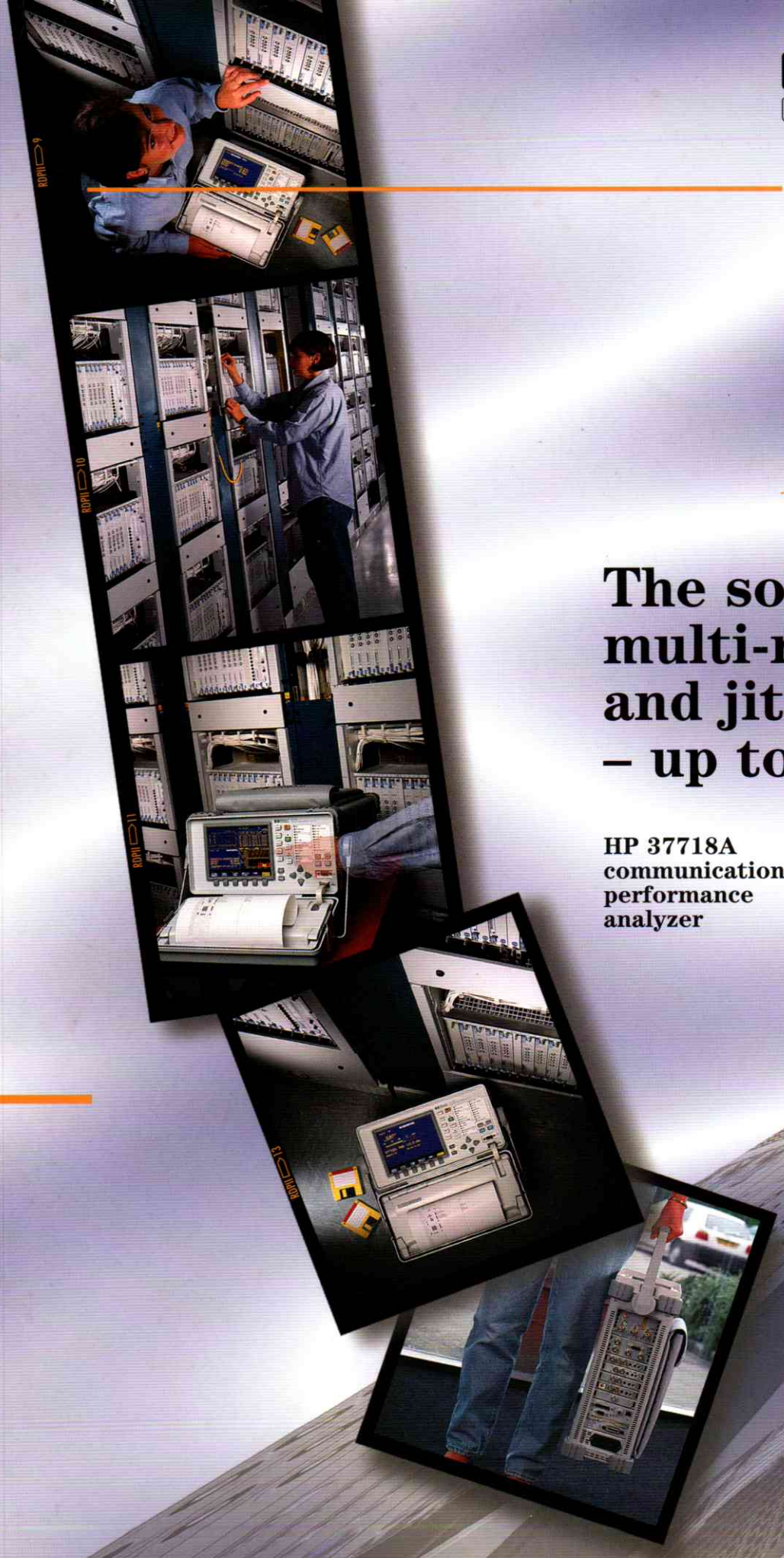
HEWLETT® PACKARD
Expanding Possibilities



The solution for multi-rate BER and jitter testing – up to 2.5 Gb/s

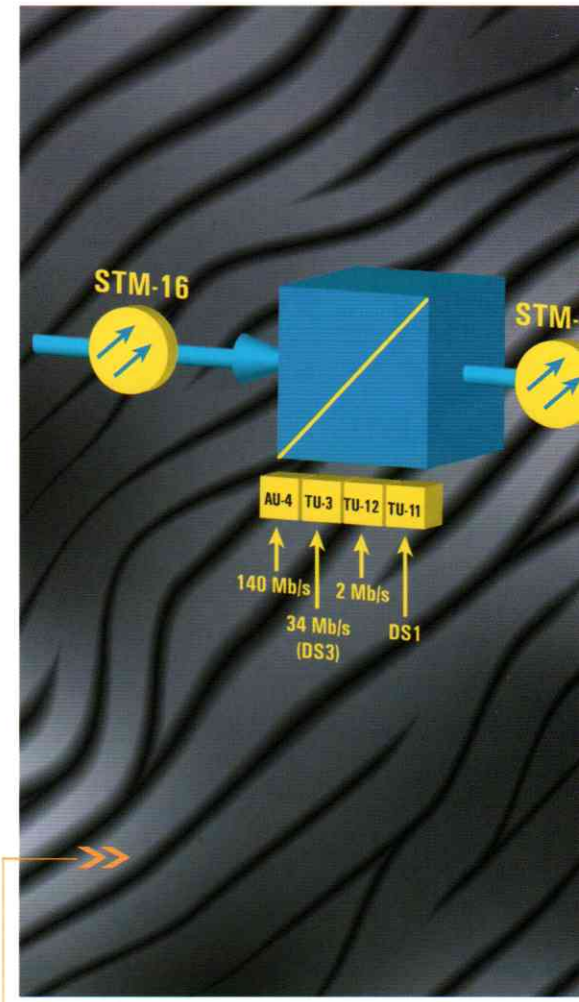
HP 37718A communications performance analyzer

A multi-rate test solution that sets the pace in network installation and manufacturing applications

- Want to speed up network installations? And keep your WDM, SDH/SONET and PDH/DSn networks at peak efficiency to deliver high-quality of service?

- Or do you need fast, accurate measurements during the design, verification and production of WDM, SDH and SONET network elements?

Either way, the HP 37718A communications performance analyzer is capable of satisfying both applications without compromising on test capability. This analyzer provides full functional test and jitter generation/analysis for all SDH/SONET and PDH/DSn rates to 2.5 Gb/s – all you need to solve today's complex transmission problems, design issues or production throughput challenges.



Carry just one instrument to track down faults in multi-rate, hybrid networks . . .

With the portable SDH/SONET HP 37718A analyzer you can travel light and move fast, safe in the knowledge that the analyzer has the capability to trace and solve faults anywhere.

Take advantage of STM-16c/ OC-48c testing

As well as all payload types, the HP 37718A analyzer tests the entire bandwidth of a broadband payload, ensuring accurate, repeatable clear-channel testing.

For accurate functional and jitter testing of concatenated payloads, use the analyzer to fill the entire payload with a test PRBS in the STM-16c/ OC-48c signal.

For residual BER measurements of a regenerator, STM-64/OC-192 tributary or WDM link, an HP 37718A analyzer with STM-16c/OC-48c capability captures all errors and is up to 16 times faster compared to a typical 155 Mb/s channelized tester.

Precise APS time measurements

Easily measure the time it takes for an automatic protection switch mechanism to activate. By measuring the payload error burst, the analyzer checks the switch meets ITU-T and Bellcore recommendations.

Identify unknown mixed payload signal structures

HP Smart Test provides fast access to frequently performed key tasks. HP Smart Setup automatically displays the contents of unknown mixed-signal structures and highlights problem areas.

Simulate real-life traffic patterns

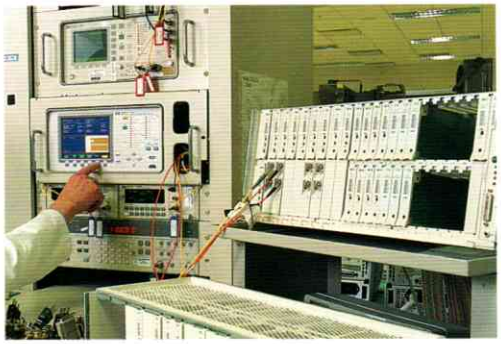
Use the analyzer to generate mixed-signal payloads.

Helpful scan modes
TroubleScan takes you straight to the important performance measurements fast, and makes results interpretation easy. AlarmScan mode points you to problem tributaries, and delivers the results you need quickly using a graphical representation of the signal structure.

Smart and easy to use

Whatever your application, the HP 37718A analyzer can significantly reduce test times—thanks to HP Smart Test. This invaluable feature ensures fast analysis and improved productivity. It helps you automate many key tests and operations used in transmission test and component design/manufacturing.

- Finds signal structure, displaying all 16 AU-4s in an STM-16
- Displays J1 trace message and C2 signal label for selected tributary
- Auto-displays mixed-payload structures and scans for alarms
- Scroll through tributary structure to select tributary for further analysis.



Ideal for manufacturing and production test
Full remote control, plug-and-play drivers, and rack mount kits are available.

. . . and use just one instrument for developing and verifying high-capacity network elements

When you need to rigorously test and verify your latest designs for global markets, use the dual SDH/SONET version of the HP 37718A analyzer.

An excellent fit for manufacturing and production test

The HP 37718A analyzer offers comprehensive threshold testing to check device alarms and errors are reported correctly to the network management system. Plus, it offers extensive jitter capability that meets ITU-T and Bellcore recommendations.

In addition, you can generate the full range of controlled pointer movement sequences to ITU-T G.783 and ANSI T1.105.03 (including automatic initialization and cool down sequences) and measure resulting tributary jitter.

One optical interface supports all SDH and SONET line rates to 2.5 Gb/s, so there's no need to recable during testing.

Speed up test development

The analyzer delivers all the test capability you'll need to fully stress and analyze the performance of both SDH/SONET and PDH/DSn transport networks and network elements.

- Comprehensive SDH and SONET test capability
- HP-IB, RS-232-C and LAN remote control support
- Plug-and-play drivers
- 19- and 23-inch rack mount kits.

A compact, portable BER and jitter analyzer —ready to perform, easy to use

Do you need powerful, precise test capability at your fingertips? . . . that's easy-to-use, ready-to-perform and at home even in the most demanding environments? If so, the HP 37718A communications performance analyzer is the solution you've been looking for.

1 **Large, color display**
The graphical display simplifies operation, making it easy to set up measurements and assess results.

2 **Logical operation**
Dedicated keys, softkeys and pop-up menus reduce setup times and aid the selection of test parameters, important when fast testing is needed.

3 **Alarm LEDs**
Network alarms are flagged via bright front-panel LEDs, giving immediate information of critical signal conditions.

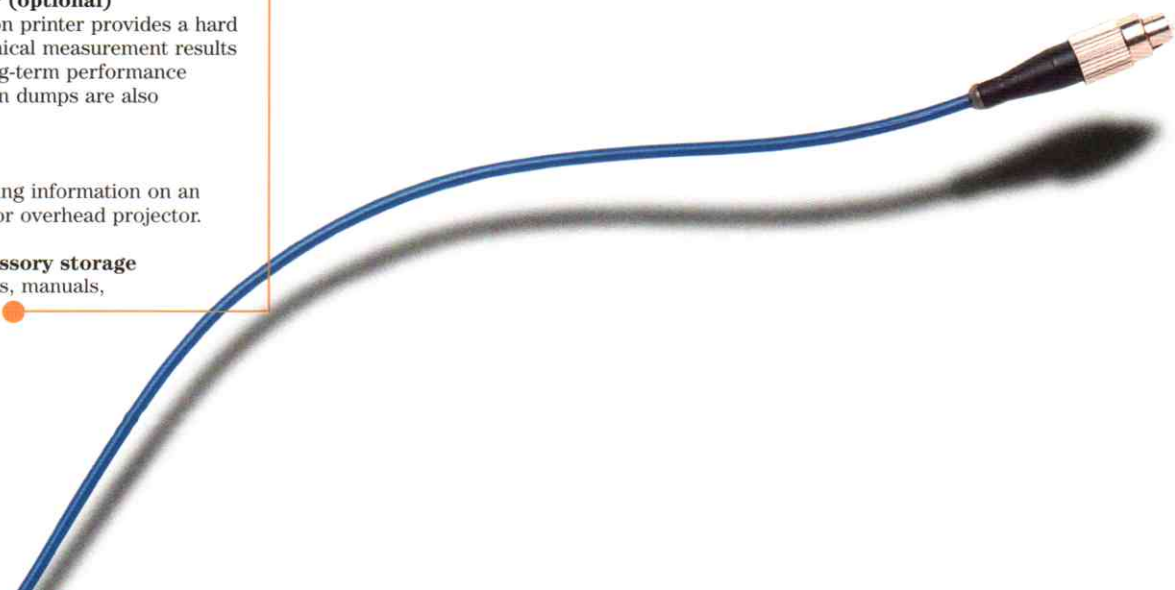
4 **HP Smart Test key**
Automatically detect unknown mixed-payload signal structures, scan tributaries and graphically display alarm and BIP errors. Automated jitter tolerance, jitter transfer and signal quality measurements are selectable too.

5 **Multi-windows mode**
View simultaneously transmit, receive, results and graphics screens.

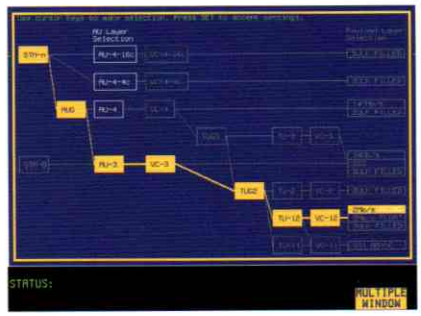
6 **Graphics printer (optional)**
The high-resolution printer provides a hard copy of text/graphical measurement results – essential for long-term performance monitoring. Screen dumps are also available.

7 **VGA output**
Useful for displaying information on an external monitor or overhead projector.

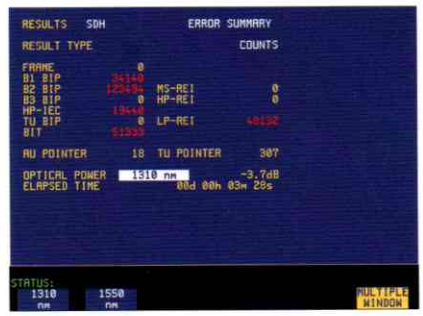
8 **Convenient accessory storage**
Pouch holds cables, manuals, floppy disks etc.



Easy-to-understand text and graphics makes for faster operation – helping you quickly connect, measure and interpret results.



Full ITU-T G.707 and Bellcore GR-253 mapping structures.

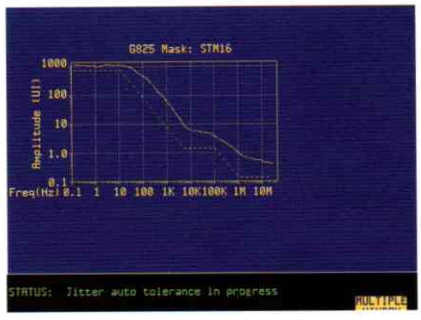


At-a-glance errors or alarms seconds summary screens.

Access textual, message-based setup and decodes of defined overhead bytes. These include S1 (sync status), K1K2 (for APS messages), and the C2 and V5 signal labels.

Use clear-channel BER testing to verify advanced equipment and services (mapped directly or carried as tributary of higher-rate signals).

The HP 37718A analyzer's patent-pending service disruption measurement is essential for checking verification of APS switch times to ITU-T/Bellcore limits without the need for an additional oscilloscope.



Perform automatic jitter tolerance testing to ITU-T and Bellcore recommendations – and eliminate signal impairments caused by wander.

Measure pointer jitter accurately in the presence of out-of-band wander. The analyzer's extensive jitter and wander test capability is essential when making SONET/SDH line jitter or tributary measurements.

All the multi-rate BER and jitter test capability you need

The HP 37718A communications performance analyzer offers comprehensive functional test and jitter capability to help you test your SDH/SONET and PDH/T-carrier networks and network equipment.

Supporting all standard transmission rates from STM-16/OC-48 through to 2 Mb/s/DS1, the analyzer is a definitive multi-rate solution.

It is equipped with all SDH and SONET payloads and mappings to ITU-T G.707 and Bellcore GR-253. Its multi-rate jitter and wander capability ensures ADMs, DXCs and WDM systems and regenerators are easily verified. Jitter generation/measurement to ITU-T and Bellcore recommendations is available from 2.5 Gb/s through 622/155 Mb/s to PDH rates (140 Mb/s to 2 Mb/s/DS1). For example, you can automatically verify the jitter tolerance of network element input ports to ITU-T G.823, G.825 and G.958.

- Automatic jitter tolerance
- Automatic narrowband jitter transfer testing
- Full jitter and wander generation
- Transient pointer jitter measurements
- Line rate jitter
- RMS and peak-to-peak measurements
- Wander generation/measurements.

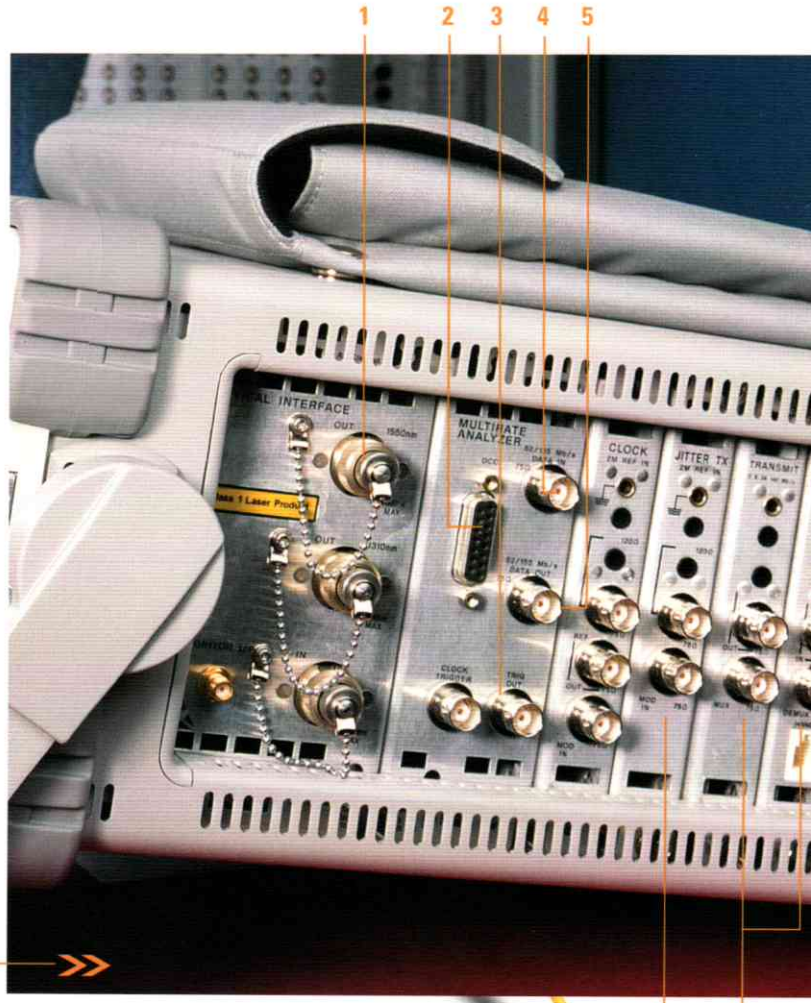
Capability you can depend on

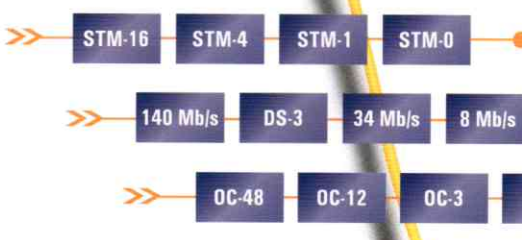
Moreover, a comprehensive range of parametric tests are available including protection switch times, optical power and frequency delay measurements. Both in-service and out-of-service testing are supported, plus simultaneous performance analysis to ITU-T G.821, G.826, M.2100 and M.2101.

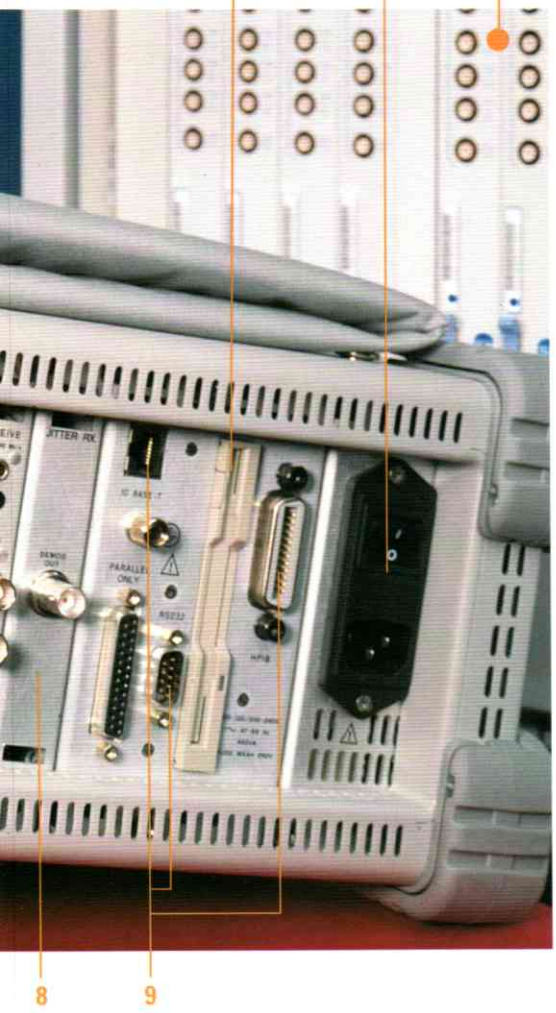
Convenient thru-mode access

The thru-mode feature with full TU-n/VTn drop/insert capability is ideal for evaluating the performance of SDH/SONET rings under error and alarm conditions. And is particularly useful when no monitor points are available.

- Passively analyze signals
- Add errors and alarms
- Generate and measure jitter.







Simply choose the SDH or dual SDH/SONET test solution that meets your needs. Each solution includes electrical and optical interfaces. There's no need to carry or store fragile plug-ins or swap modules during tests. You only have to select the appropriate optical rates and decide whether to add jitter generation and measurement.

1 **Optical interfaces (choose 1310, 1550 or 1310/1550 nm)**
For testing BER and/or jitter. Transmit and receive interfaces cover all rates from 52, 155, 622 Mb/s through 2.5 Gb/s (STM-0/OC-1 to STM-16/OC-48).

2 **Data communications channel (DCC) port**
Drop/insert of D1–D3 and D4–D12 bytes for further analysis.

3 **Frame pulse, divided clock and trigger outputs**
Synchronize your oscilloscopes for pulse mask, eye diagram testing etc.

4 **Electrical interfaces**
52/155 Mb/s transmit and receive interfaces support STM-0/STS-1 and STM-1/STS-3.

5 **Multiple synchronization inputs**
10 MHz, 2 and 1.5 Mb/s, and 64 kb/s reference inputs.

6 **Jitter transmitter (optional)**
Jitter and wander generation up to 2.5 Gb/s. Auto jitter tolerance/transfer plus external jitter modulation input.

7 **PDH measurements**
Full mux/demux from 64 kb/s to 140 Mb/s or DS3.

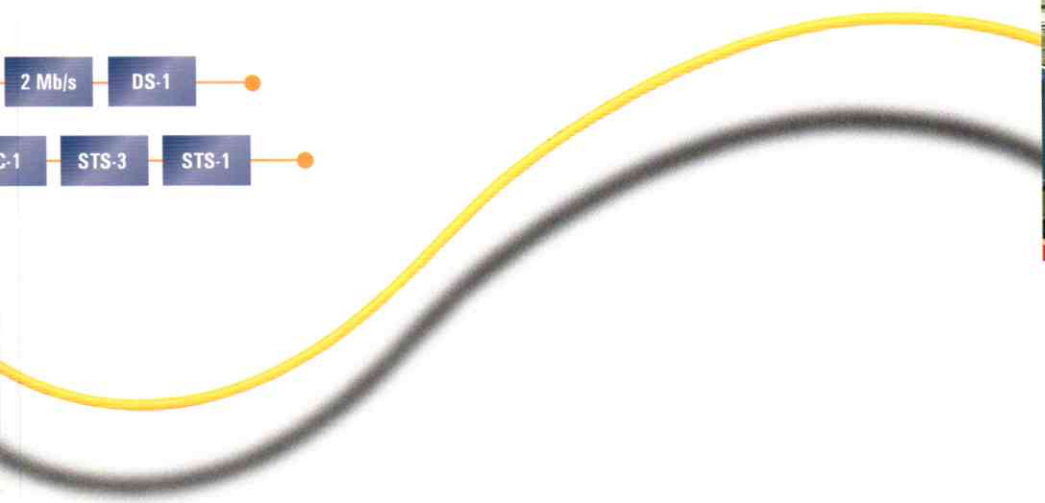
8 **DSP-based jitter measurement (optional)**
Unrivalled low intrinsics, plus rms/peak-to-peak measurements. LP/HP and 12 kHz HP filters plus 0.001 UI resolution, external demodulated jitter output.

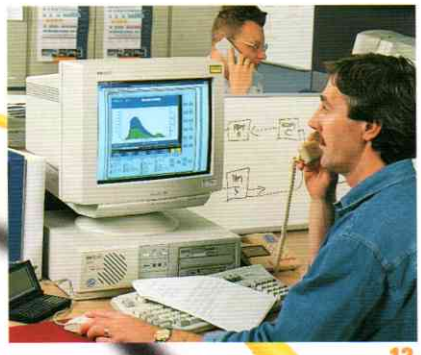
9 **Full remote control**
HP-IB, RS-232-C, LAN programming control. (Plug-and-play drivers available.)

10 **Floppy disk drive**
Install firmware upgrades, store/recall graphic results, log results, store bitmaps of screen shots.

11 **Auto-ranging power supply**
Global operation without worrying about setting voltage selection switches etc.

12 **PC software**
Interactive control of a remote HP 37718A analyzer from a central support office for both long-term monitoring and assisting technicians at remote sites. Additionally, create and run your own customized test sequences and transfer results to other Windows®-based applications to provide detailed quality-of-service information for managers and customers.





12